

CLASS EXERCISES

Find the inverse of each relation or function.

1. $\{(2, 5), (3, 7), (9, 8)\}$
2. $\{(-3, 4), (-2, 5), (-1, 0)\}$
3. $y = 3x + 1$
4. $y = 2x - 1$
5. $y = -3x + 4$
6. $y = -2x + 5$

Find the inverse of each function and determine whether the inverse is a function. Graph f , f^{-1} , and $y = x$ on the same coordinate plane.

7. $y = 3x - 1$
8. $y = -2x - 3$
9. $y = 2x^2$
10. $y = x^3$

PRACTICE EXERCISES

Find the inverse of each relation or function.

1. $\{(2, 4), (4, 8), (8, 16)\}$
2. $\{(-1, -2), (-2, -4), (-3, -6)\}$
3. $y = 4x - 1$
4. $y = -x + 2$
5. $y = 5x - 2$
6. $y = -5x + 6$
7. $y = -3x + 3$
8. $y = -2x - 5$

Find the inverse of each function and state its domain and range. Use a mapping diagram to determine if the inverse is also a function.

9. $\{(3, 3), (4, 4), (5, 5), (6, 6)\}$
10. $\{(-1, 2), (-2, 4), (-3, 6), (-4, 8)\}$
11. $\{(1, 3), (2, 3), (4, 5), (9, 5)\}$
12. $\{(0, 0), (1, 0), (2, 3), (3, 3)\}$
13. $\{(d, 3), (e, 3), (f, 3), (g, 4)\}$
14. $\{(j, 1), (k, 2), (l, 3), (m, 4)\}$

Find the inverse of each function. Graph f , f^{-1} , and $y = x$.

15. $y = 2x - 3$
16. $y = 7x - 3$
17. $y = 9x - 4$
18. $y = -x$
19. $y = -4x + 13$
20. $y + 7x = 2$

Find the inverse of each relation or function.

21. $y = 2x + 3, x = 1, 2, 3$
22. $y = -3x + 1, x = 0, 1, 2$
23. $y = 2x - 5, x = -1, -2, -3$
24. $y = -2x - 1, x = -2, -3, -4$

Find the inverse of each function and state its domain and range. Determine if the inverse is also a function.

25. $f(x) = 3x + 4$
26. $f(x) = 4x - 5$
27. $f(x) = -x + 7$
28. $f(x) = -2x + 3$
29. $f(x) = \frac{2}{3}x - 3$
30. $f(x) = -\frac{3}{4}x + 2$
31. $\{(x, y): y = 2x, x \text{ is a positive integer less than } 3\}$
32. $\{(x, y): y = 3x - 1, x \text{ is a negative integer greater than } -5\}$
33. $\{(x, y): y = -3x + 4, x \text{ is a positive integer less than } 6\}$
34. $\{(x, y): y = -5x + 2, x \text{ is a negative integer greater than } -7\}$